

Remarks

Claims 1 to 16 are pending of which only claim 1 is in independent form. Claim 9 is amended.

In paragraphs 1 and 2 the Office rejected claims 9 to 16 under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

In particular, the Office noted that claim 9 was grammatically incorrect.

In response, applicants have amended claim 9 appropriately.

In paragraphs 3 and 4 the Office continues to reject claims 1 to 3, 6, 8, 9 and 11 under 35 U.S.C. §102(b) as anticipated by United States Patent 4,712,778 to Newman.

Applicants' invention is directed towards an antivibration element which comprises a coil spring having a guide member.

Claim 1 requires:

"a coil spring of said antivibration element having an end section and a transition section extending from said end section;  
a guide member defining a guide slot  
having a base;  
said end section fixed in said slot;  
and,  
said transition section being guided on said guide slot with play (b) to said base of said guide slot, wherein said play (b) increases with increasing distance from said end section." (emphasis added).

The above emphasized elements of the invention are, for example, shown in Figure 2 of applicants' disclosure: Here it is shown that the coil spring has, relative to the base of the slot

(15), that is, in a radial direction to the longitudinal center axis (13) of the coil spring (2), a play (b). This play (b) increases in the transition section from (b) to (b'), wherein in (b') the distance from the base slot is greater. During a perpendicular deformation of the antivibration element as shown in FIG. 6 of applicants' disclosure, the turns of the coil spring lay against the base of the slot one after the other, which is made possible by the increasing play relative to the base of the slot. Thus, upon a deformation perpendicular to the longitudinal center axis (13) of the coil spring (2), a progressive characteristic line of the antivibration element can be achieved. In contrast, during a deformation of the antivibration element in the direction of the longitudinal center axis (13), that is, in an axial direction, the increasing play relative to the base of the slot is irrelevant. Here only plays (c) and (d) relative to the flanks of the slot shown in FIG. 2 are effective.

Newman discloses a helical spring, which is intended to be subjected to tension or compression forces, that is, forces extending into the longitudinal direction of the spring (column 3, line 45). A contact of the helical spring with the base of the slot is not envisioned and shall, in fact, be avoided. To that end, Newman's slots are designed to have sufficient depth (column 4, lines 7 to 10). Newman does not intend that his helical spring lays against the slot upon deformation.

The Figure "US 4,712,778 (Newman)" which is attached as an Appendix to this response shows the relevant plays. In the direction of the longitudinal axis of the helical spring, that is in axial direction, the penultimate turn of the spring relative

to the plug, an axial play (a) which increases to axial play (a') exists. The axial play (a') exists half a turn from axial play (a). At the opposite end of the helical spring the axial play increases from (a) to (a"). The distance to the flanks of the slot that lies in the longitudinal direction of the helical spring therefore increase with increasing distance to the end portion of the helical spring. The distance to the base of the slot, which corresponds to the in applicants' invention relevant radial play, is shown by the letter (p) in the attached Figure. As can be seen in the attached Figure, this distance remains the same over the first and second turn. At the last turn, the radial play (p) then decreases to radial play (p'). Here, the helical spring almost lays against the guide. At the opposite end of the helical spring, the radial play (p) remains also constant over almost two turns and then decreases to (p"). Accordingly, Newman does not disclose the following element of the claimed invention:

said transition section  
being guided on said guide slot  
with play (b) to said base of  
said guide slot, wherein said  
play (b) increases with  
increasing distance from said  
end section." (emphasis added).

Rather Newman's play to the base of the slot remains constant over a number of turns and then decreases sharply.

As a result, a deformation perpendicular to the longitudinal axis of the helical spring would, due to play p' and p", result in the last turn at the plug to lay against the base of the slot already upon slight deformation. With the conformation of

Newman, the turns cannot lay against the base of the slot starting from the end section, that is, a continuous shortening of the effective spring length is not possible.

Applicants have shown above that Newman does not disclose all the elements of the claimed invention as required for an anticipation rejection.

In paragraph 5, the Office rejected claims 1, 8, 9, 10, 11 and 16 under 35 U.S.C. §102(b) as anticipated by United States Patent 1,878,128 to Griswold.

While applicants maintain that Griswold constitutes non-analogous art, applicants note that in Griswold the first two turns of the helical springs (33 and 34) are respectively attached to Griswold's plug. At this plug, a tubular extension (36) is provided, which serves as a guide for the valve stem (14). In view of the arrangement of the springs at a valve stem, the springs can only be deformed in an axial direction. A deformation in a perpendicular direction, is not possible with the configuration of Griswold. Since the tubular extension (36) only serves as a guide for the valve stem (14), a large radial distance (d) to the two helical springs is provided. This is illustrated in the Figure of Griswold that is attached as an Appendix to this response. A guide for the helical springs (33 and 34) in the form of a guide slot as required by claim 1 is not provided.

As noted above, claim 1 requires:

a guide member defining a guide slot  
having a base;  
said end section fixed in said slot;  
and,  
said transition section being guided

on said guide slot with play (b) to said base of said guide slot, wherein said play (b) increases with increasing distance from said end section." (emphasis added).

The helical springs (33 and 34) are only at the end sections guided by the plug. Since no guide slot is provided as a guide at extension (36), no play to the base of the slot exists. At best, Griswold discloses a constant distance (d) to the extension (36). A play that increases with increasing distance from the end section, that is, a distance that is measured into a radial direction of a helical spring, as required by the claim 1 (see emphasis provided above), is not disclosed.

Accordingly, Griswold does not disclose all the elements of the claimed invention as required for an anticipation rejection.

In paragraphs 6 to 10, the Office rejected claims 4 and 5, claim 10, claims 12 to 15 and claim 16 under 35 U.S.C. §103(a) as obvious over Newman in view of United States Patent 4,886,250 to Lucas, United States Patent 4,905,574 to Trevisan, United States Patent 3,779,537 to Kalister and Griswold, respectively.

The deficiencies of Newman have been discussed in detail above. Applicants submit that none of the secondary references cited by the Office cure these deficiencies. In particular, applicants submit that Newman and the secondary references do not teach or suggest all the elements of the claimed invention as required for an prima facie case of obviousness (MPEP §2142). In addition, there is no motivation either in Newman, the secondary references cited or in the knowledge generally available to one of ordinary skill in the art, to modify the cited art or to combine its teachings to arrive at the claimed invention as

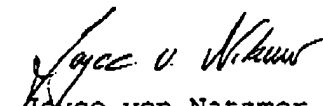
required for a prima facie case of obviousness. Applicants also submit that there is no expectation of success.

In addition, Newman discloses in column 4, lines 6 to 10 explicitly that a laying against the base of his slot should be avoided. Applicants submit that the play to the base of the slot that increases with increasing distance to the base of the end section require by claim 1 favors such a laying against the base as shown in FIG. 4 and discussed on page 6 of the specification. Accordingly, the modification proposed by the Office would render the prior art invention being modified, here Newman, unsatisfactory for its intended purpose. This supports that there is no suggestion or motivation to make the proposed modification (MPEP §2143.01).

Applicants have shown above that claim 1 is neither anticipated nor made obvious by Newman or Griswold and thus should be in condition for allowance. Claims 2 to 16, which are directly or indirectly dependent on claim 1 should therefore also be allowable.

Reconsideration of this application is respectfully requested.

Respectfully submitted,

  
Joyce von Natzmer  
Reg. No. 48,120

Walter Ottesen  
Patent Attorney  
P.O. Box 4026  
Gaithersburg, Maryland 20885-4026

Phone: (301) 869-8950

Date: January 12, 2005